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CLAIMS

What is claimed is:

1.   An apparatus for use with a dual imaging system including a
first and second imaging configurations to collect first and second image
data sets, respectively, that define adjacent first and second imaging areas
along a translation axis, respectively, and that include first and second
5 imaging detectors laterally displaced from the axis, respectively, the first and
second configurations fixed with respect to each other along the axis, the
system positioned adjacent a table support that supports a table for
movement through the imaging areas along the axis, the apparatus for
compensating for table deflection during table extension and comprising:

10   at least one sensor for sensing the position of at least one table
segment as the table is extended from the support and into the imaging
areas;

a determiner for using the position signals to determine the relative
position of at least one of the first and second detectors with respect to the
15 table during data acquisition; and

a compensator using the at least one relative position to modify at
least one of the data sets prior to the sets being combined to form a unified
image.

2.   The apparatus of claim 1 wherein the first configuration is a functional configuration for obtaining imaging data corresponding to a dynamic characteristic and the second configuration is a static configuration for obtaining data corresponding to a static characteristic.

3.   The apparatus of claim 2 wherein the static configuration is positioned between the support and the functional configuration.

4.   The apparatus of claim 3 wherein the sensor is positioned adjacent the functional configuration opposite the static configuration.

5.   The apparatus of claim 4 wherein the at least one sensor is a first sensor and the apparatus further includes at least a second sensor that senses the position of at least a second table segment and, wherein, the determiner also uses position signals from the second sensor to determine
5   the relative position.

6.   The apparatus of claim 5 wherein the second sensor is positioned between the functional and static configurations.

7.   The apparatus of claim 5 wherein the determiner determines the relative positions of each of the functional and static detectors with respect to the table and the compensator uses each of the relative positions to modify at least one of the data sets prior to the sets being combined to
5   form a functional/static image.

8.   The apparatus of claim 6 wherein the compensator modifies each of the functional and static data sets prior to combining.

9.   The apparatus of claim 8 wherein each of the first and second sensors senses the vertical position of the table with respect to a fixed reference point and the position signals indicate the reference point to vertical table position distance.

10.   The apparatus of claim 9 wherein the sensors are selected from a group consisting of laser sensors, ultrasonic sensors, light sensors, optical sensors, magnetic sensors and resistive sensors.

11.   The apparatus of claim 1 wherein the at least one sensor is a first sensor positioned adjacent the system and opposite the support and the apparatus further includes at least a second sensor positioned between the first and second configurations that senses the position of at least a second
5 table segment and, wherein, the determiner also uses position signals from the second sensor to determine the relative position.

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12.   A method for use with a dual imaging system including first
and second imaging configurations to collect first and second image data
sets, respectively, that define adjacent first and second imaging areas along
a translation axis, respectively, and that include first and second imaging
5 detectors laterally displaced from the axis, respectively, the first and second
configurations fixed with respect to each other along the axis, the system
positioned adjacent a table support that supports a table for movement
through the imaging areas along the axis, the method for compensating for
table deflection during table extension and comprising the steps of:

10   sensing the position of at least one table segment as the table is
extended from the support and into the imaging areas;

using the position signals to determine the relative position of at least
one of the first and second detectors with respect to the table during data
acquisition; and

15   using the at least one relative position to modify at least one of the
data sets prior to the sets being combined to form a unified image.

13.   The method of claim 12 wherein the step of sensing includes
providing a sensor is positioned adjacent the system opposite the support.

14.   The method of claim 13 wherein the step of providing a sensor
includes providing a first sensor adjacent the system and a second sensor
and wherein the step of using the position signals includes using signals
from each of the first and second sensors.

15.   The method of claim 14 wherein the step of providing the second sensor includes positioning the second sensor between the functional and static configurations.

16.   The method of claim 12 wherein the step of using the position signals includes the step of determining the relative positions of each of the first and second detectors with respect to the table and the step of using the relative positions includes using each of the relative positions to modify at 5 least one of the data sets prior to the sets being combined to form a unified image.

17.   The method of claim 12 wherein the compensator modifies each of the first and second data sets prior to combining.

18.   The method of claim 12 wherein the step of sensing includes sensing the vertical position of the table with respect to a reference point.

19.   An apparatus for use with a dual imaging system including a functional imaging configuration and a static imaging configuration to collect functional and static image data sets, respectively, that define adjacent functional and static imaging areas along a translation axis, respectively, 5 and that include functional and static imaging detectors laterally displaced from the axis, respectively, the functional and static configurations fixed with respect to each other along the axis, the system positioned adjacent a table support that supports a table for movement through the imaging areas along the axis, the apparatus for compensating for table deflection during table 10 extension and comprising:

a first sensor for sensing the vertical position of at least a first table segment as the table is extended from the support and into the imaging areas, the first sensor positioned adjacent the system opposite the support;

a second sensor for sensing the vertical position of at least a second 15 table segment as the table is extended from the support and into the imaging areas, the second sensor positioned between the first sensor and the support;

a determiner for using the position signals from the first and second sensors to determine the relative positions of each of the functional and 20 static detectors with respect to the table during data acquisition; and

a compensator using the relative positions to modify at least one of the data sets prior to the sets being combined to form a functional/static image.

20.   The apparatus of claim 19 wherein the static configuration is positioned between the support and the functional configuration.

21.   A method for use with a dual imaging system including a
functional imaging configuration and a static imaging configuration to collect
functional and static image data sets, respectively, that define adjacent
functional and static imaging areas along a translation axis, respectively,
5 and that include functional and static imaging detectors laterally displaced
from the axis, respectively, the functional and static configurations fixed with
respect to each other along the axis, the system positioned adjacent a table
support that supports a table for movement through the imaging areas along
the axis, the method for compensating for table deflection during table
10 extension and comprising the steps of:

providing first and second position sensors adjacent the imaging
area and displaced along the axis for sensing the vertical positions of the
table along the axis during data acquisition;

sensing the positions of table segments as the table is extended from
15 the support and into the imaging areas;

using the position signals to determine the relative positions of each
of the functional and static detectors with respect to the table during data
acquisition; and

using the relative positions to modify at least one of the data sets
20 prior to the sets being combined to form a functional/static image.